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Taxonomic studies on Acrididae (Orthoptera: Acridoidea) from Rajasthan (India)

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ABSTRACT

Thirty seven species of locusts and grasshoppers representing twenty five genera and eleven subfamilies belonging to the family Acrididae are reported from different localities of Rajasthan. Localities surveyed and distribution of each species collected from Rajasthan is discussed. Their distinguishing characters and keys to subfamilies, genera and species wherever necessary are given. A comprehensive report of Acridid fauna of this region is given for the first time.

Keywords: Taxonomy, Acrididae, Acridoidea, Orthoptera, Rajasthan.

1. Introduction

Grasshoppers are widely distributed in all ecological systems with significant economic importance due to their destructive role to almost all type of green vegetation. Among insects, the order Orthoptera is one of the largest having over 20,000 species worldwide with about 10% of the total world species (1,750 species) recorded from India [21]. Acridoidea is a superfamily of grasshoppers including locusts in the order Orthoptera. They are commonly known as the short-horned grasshopper and placed in the suborder Caelifera. Species that change colour and behaviour at high population densities are called locusts. Grasshoppers have antennae that are almost always shorter than the body, and short ovipositors. Locusts are several species of short-horned grasshoppers of the family Acrididae that sometimes form very large groups (swarms); these can be highly destructive and migrate in a more or less coordinated way. Thus, these grasshoppers have solitary and gregarious (swarm) phases. Locust swarms can cause massive damage to crops.

Rajasthan is the largest state of the Republic of India by area. It encompasses most of the area of the large, inhospitable Great Indian Desert (Thar Desert), which has an edge paralleling the Sutlej-Indus river valley along its border with Pakistan. The state is bordered by Pakistan to the west, Gujarat to the southwest, Madhya Pradesh to the southeast, Uttar Pradesh and Haryana to the northeast and Punjab to the north. Rajasthan covers an area of 132,150 sq mi or 342,239 km². The main geographic features of Rajasthan are the Thar Desert and the Aravalli Range, running through the state from southwest to northeast, almost from one end to the other, for more than 850 km. Mount Abu is at the southwestern end of the range, separated from the main ranges by the West Banas River, although a series of broken ridges continues into Haryana in the direction of Delhi where it can be seen as outcrops in the form of the Raisina Hill and the ridges farther north. About three-fifths of Rajasthan lies northwest of the Aravallis, leaving two-fifths in the east and south.

Stal was probably the first to initiate the study of Indian Acrididae [18, 19, 20]. Walker [30, 31] and Saussure [15, 16] also studied some Indian fauna. Contribution to the Indian Acridoidea was also made by Bolivar [2, 3, 4, 5, 6, 7, 8]. Kirby prepared a catalogue for the Acrididae of the world [11]. A notable taxonomical work on Acrididae was made by Kirby in the series 'Fauna of British India' [12]. Uvarov studied in detail Indian Acrididae [25, 26, 27, 28, 29]. Recently Usmani *et al.* [23], Usmani *et al.* [24], Kumar and Usmani studied Indian Acrididae [13, 14]. Tandon and Shishodia [22], Ahluwalia *et al.* [1], Chandra [9], Shishodia [17] and Dhakad *et al.* [10] studied the acridids of Rajasthan. Visualizing the economic importance of these pests in agriculture, an extensive and intensive survey to study taxonomy and distribution of the locusts and grasshoppers belonging to the family Acrididae was undertaken in different areas of Rajasthan. Systematic study of the material collected from various habitats and localities was made. The specimens were collected from different habitats and host plants which makes the material extremely valuable.

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2. Material and Methods: The present authors collected new material (760 specimens) of adult grasshoppers of both sexes from various localities of Rajasthan which served the basis for the present critical study. A complete record was also maintained indicating the reference number, locality, data of collection and name of host plants etc.

I) Collection of adult grasshoppers: The authors surveyed various agricultural areas of various localities of Rajasthan during the period 2012-2015 for the collection of grasshoppers and locusts. They were caught by hands, by forceps, and by the ordinary aerial insect net. The net was used for catching insects individually or by sweeping on grasses, bushes and other vegetables. Attempts were made to collect the specimens from their host plants as well as those attracted to light during the night. They were captured on different dates in different months from various crops. Different parts of crops were examined. Attention was also given to fruits and vegetables. The collected specimens were killed in cyanide bottles.

II) Preparation for morphological studies: Dry mounts were also prepared for better understanding of certain characters like size, colour, texture etc. For this purpose, the specimens were first relaxed, stretched and later, pinned and labeled. Permanent collections of pinned specimens were kept in store boxes and cabinets for further studies on their morphological structures.

III) Preparation for genitalic studies: For a detailed study of the various components of genitalia, the permanent slides were prepared and examined under the microscope in order to make a detailed study of the genitalic structures. Drawings were initially made with the help of a camera lucida. Details were filled in by conventional microscope examination.

The material collected during survey has been deposited in the Zoological Museum of the Aligarh Muslim University, Aligarh, India.

3. Results and Discussion: The present study included 760 specimens of family Acrididae from different habitats of various cultivated and non-cultivated areas of Rajasthan. This captured material includes thirty seven species over twenty five genera and eleven subfamilies, taxonomic details of which are as following:

Taxonomic Account:

Family Acrididae Macleay, 1821

Acridina MacLeay, 1821. *Horae Entomologicae*. 2.

Type genus: *Acrida* Linnaeus, 1758. *Systema Naturae per Regna tria naturae* (10th ed.). 1: 427.

Diagnosis: Size small to large. Body and head of variable shape. Antennae filiform or slightly depressed or ensiform and longer than fore femora. Frons vertical or oblique. Fastigium of vertex short or long with variable shape. Frontal ridge usually wide, often with median depression. Pronotum short with or without median and lateral carinae. Prosternal process present or absent. Tegmina and wings fully developed, reduced or absent. Tympanum usually present. Stridulatory mechanism of variable structure,

present or absent. Lower basal lobe of hind femur shorter than or as long as upper one, tarsi three segmented. Arolium between claws present. Epiphallus usually bridge-shaped, rarely disc-shaped; ancorae and lophi present, sometimes absent. Basal and apical valves of aedeagus connected by flexure, sometimes divided, gonopore process present. Spermatheca usually with apical and pre-apical diverticulum.

Remarks: Priority for family-group names based on *Acrida* dates from Acridina MacLeay, 1821. First used as Acrididae by Krauss, 1890.

The family Acrididae is represented by eleven subfamilies from this region. A key for their separation is given below:

Key to subfamilies of Acrididae, Macleay, 1821

1. Prosternal process usually absent, if present, body strongly elongate and antennae ensiform; hind tibia without external apical spine; epiphallus bridge shaped, bridge undivided; spermatheca with apical diverticulum short or rudimentary, pre-apical diverticulum sac like.....**9**
 - Prosternal process present; hind tibia with or without external apical spine; epiphallus disc or bridge shaped, bridge divided or undivided; spermatheca with apical and pre-apical diverticula tubular.....**2**
2. Lower knee lobe of hind femur never spined; valves of ovipositor never serrate or spined; hind tibia never flattened.....**3**
 - Lower knee lobe of hind femur spined; valves of ovipositor serrate or spined; hind tibia flattened.....**Oxyinae** Brunner, 1893
3. Hind femur never much robust, usually reaching beyond apex of abdomen; epiphallus bridge shaped, ancorae usually curved, articulated with bridge, lophi present; male cercus never toothed apically.....**4**
 - Hind femur much robust, never reaching beyond apex of abdomen; epiphallus disc shaped, ancorae finger shaped, articulated in the middle of the disc, lophi absent; male cercus large, strong, curved and toothed apically.....**Calliptaminae** Brunner, 1893
4. Radial area of tegmen without transverse stridulatory veinlets; valves of aedeagus flexure; arolium of variable size.....**6**
 - Radial area of tegmen with a series of regular, parallel, thickened, transverse stridulatory veinlets; valves of aedeagus divided or connected by small or indistinct flexure; arolium large.....**5**
5. Prosternal process transverse, lamellate, subquadrate or approximately so in outline; apical abdominal tergite with well indicate or subobsolete furcular lobes.....**Spathosterninae** Rehn, 1957
 - Prosternal process usually conical; apical abdominal tergite without furcular lobes.....**Hemiacruidinae** Dirsh, 1956
6. Mesosternal interspace open; hind femur with dorsal carina finely denticulate, sometimes smooth; external apical spine of hind tibia usually absent.....**7**

- Mesosternal interspace closed; hind femur with dorsal carina smooth; external apical spine of hind tibia present.....**Tropidopolinae** Jacobson, 1905
- 7. Mesosternal lobes rounded; ancorae well developed and curved; pronotum with median carina never raised; spermatheca with apical diverticulum moderately long.....**8**
- Mesosternal lobes rectangular; ancorae small or indistinct; pronotum with median carina slightly raised; spermatheca with apical diverticulum very long and slender.....**Cyrtacanthacridinae** Kirby, 1910
- 8. Pronotum with lateral carinae linear; male cercus strongly compressed, apex downcurved.....**Eyprepocnemidinae** Brunner, 1893
- Pronotum without lateral carinae, if present, never linear; male cercus variable, never strongly compressed, apex normal.....**Catantopinae** Brunner, 1893
- 9. Frons usually oblique; medial area of tegmen usually without intercalary vein, if present, never serrated in both sexes.....**10**
- Frons usually vertical; medial area of tegmen with intercalary vein usually serrated.....**Oedipodinae** Walker, 1871
- 10. Stridulatory serration on inner side of hind femur usually absent, if present, body strongly elongated and its stridulatory file represented by closely set rigid tubercles and articulated bristles.....**Acridinae** Macleay, 1821
- Stridulatory serration on inner side of hind femur present and its stridulatory file with articulated pegs.....**Gomphocerinae** Fieber, 1853

Subfamily Oxyinae Brunner von wattenwyl, 1893

Genus *Oxya* Serville, 1831

Oxya Serville, 1831. *Ann. Sci. nat.* 22(86): 264, 286.

Type species: *Oxya hyla* Serville, 1831 (= *hyla hyla*). *Ann. Sci. nat.* 22(86): 28-65, 134-167, 262-292.

Diagnosis: Body of medium size. Antennae filiform. Fastigium of vertex without mid-longitudinal carinula. Frontal ridge sulcate. Dorsum of pronotum crossed by three transverse sulci; median carina weak; lateral carinae absent; metazona shorter than prozona; posterior margin of pronotum rounded or obtusely angular. Prosternal process conical. Mesosternal interspace open. Tegmina fully developed or shortened. Hind femur slender with lower genicular lobe spined. Hind tibia expanded in apical half, spines situated uniformly; external apical spine present. The genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Oxya* Serville, 1831

1. Ventral surface of subgenital plate convex, flat or, at most, with a weak apical concavity.....***O. hyla hyla*** Serville, 1831
- Ventral surface of subgenital plate with a broad median longitudinal groove running from posterior margin at least two middle of plate, with or without longitudinal ridge on each side.....***O. fuscovittata*** (Marschall, 1836)

***Oxya fuscovittata* (Marschall, 1836)**

Gryllus fuscovittatus Marschall, 1836. *Ann. Naturhist. Mus.*

Wien. 1(2): 211.

Oxya fuscovittata (Marschall); Mishchenko, 1965. *Fauna of Russia Orthopt.* 148[125].

Material examined: INDIA, Rajasthan, Dungarpur, 4♂♂, 1♀, 09-X-2009, on grasses.

Measurements (length in mm):

Male: Body: 21.91; Pronotum: 4.53; Antenna: 9.19; Tegmina: 18.72; Hind Femur: 14.18.

Female: Body: 26.28; Pronotum: 6.09; Antenna: 8.43; Tegmina: 23.81; Hind Femur: 16.69.

Distribution: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Goa, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Uttar Pradesh and West Bengal.

***Oxya hyla hyla* Serville, 1831**

Oxya hyla Serville, 1831. *Ann. Sci. nat.* 22(86): 28-65, 134-167, 262-292.

Oxya hyla hyla Serville; Nayeem and Usmani, 2012. *Munis Entomology & Zoology.* 7(1): 397.

Material examined: INDIA, Rajasthan, Udaipur, 3♂♂, 4♀♀, 06-X-2009, on bajra; Dungarpur, 1♂, 09-X-2009, on grasses; Bharatpur, 1♂, 4♀♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 22.50; Pronotum: 4.42; Antenna: 8.09; Tegmina: 19.05; Hind Femur: 13.13.

Female: Body: 26.59; Pronotum: 5.16; Antenna: 7.96; Tegmina: 27.21; Hind Femur: 15.73.

Distribution: Andhra Pradesh, Arunachal Pradesh, Bihar, Assam, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Goa, Delhi, Chhattisgarh, Kerala, Gujarat, Uttar Pradesh and West Bengal.

Subfamily Calliptaminae Tinkham, 1940

Genus *Acorypha* Krauss, 1877

Acorypha Krauss, 1877. *S.B. Akad. Wiss. Wien, Math.-Nat. Kl. (Abt. 1).* 76(1): 38.

Type species: *Acorypha picta* Krauss, 1877. *Anz. Akad. Wiss. Wien.* 14: 141.

Diagnosis: Body of medium size. Antennae filiform. Fastigium of vertex with longitudinal concavity. Frontal ridge flat. Dorsum of pronotum crossed by three transverse sulci; median and lateral carinae distinct; metazona longer than prozona; posterior margin of pronotum angular. Prosternal process thick, cylindrical or transversely flattened. Mesosternal interspace open. Tegmina and wings fully developed. Hind femur short, moderately robust with expanded lower marginal area. Hind tibia with inner spur of

inner side much longer than external. Arolium small.
The genus is represented by two species from this region. A key for their separation is given below:

Key to the species of Genus *Acorypha* Krauss, 1877

1. Lower inner spur of hind tibia with the apex prominent beyond the base of the claw, in the shape of obtuse tubercle bearing dense and long hairs; pronotum with metazona much longer than prozona; prosternal process strongly cylindrical.....*A. insignis* (Walker, 1870)
- Lower inner spur of hind tibia with the apex simply recurved bearing sparse hairs; pronotum with metazona slightly longer than prozona; prosternal process slightly transverse.....*A. glaucopsis* (Walker, 1870)

***Acorypha glaucopsis* (Walker, 1870)**

Caloptenus glaucopsis Walker, 1870. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum*. 4: 702.

Acorypha glaucopsis (Walker); Nayeem and Usmani, 2012. *Munis Entomology & Zoology*. 7(1): 409.

Material examined: INDIA, Rajasthan, Rajasmand, 1♂, 07-X-2009, on jowar; Banswara, 1♂, 1♀, 08-X-2009, on grasses.

Measurements (length in mm):

Male: Body: 20.35; pronotum: 4.69; antenna: 7.57; tegmina: 16.48; hind femur: 12.81.

Female: Body: 32.46; pronotum: 7.26; antenna: 11.62; tegmina: 24.21; hind femur: 18.00.

Distribution: Rajasthan, Bihar, Jharkhand, Uttar Pradesh and Madhya Pradesh.

***Acorypha insignis* (Walker, 1870)**

Caloptenus insignis Walker, 1870. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum*. 4: 701.

Acorypha insignis (Walker); Nayeem and Usmani, 2012. *Munis Entomology & Zoology*. 7(1): 410.

Material examined: INDIA, Rajasthan, Banswara, 1♂, 1♀, 08-X-2009, on grasses.

Measurements (length in mm):

Male: Body: 20.19; pronotum: 4.74; antenna: 8.82; tegmina: 16.87; hind femur: 12.00.

Female: Body: 25.00; pronotum: 5.72; antenna: 9.08; tegmina: 21.93; hind femur: 15.41.

Distribution: Rajasthan, Jharkhand and Madhya Pradesh.

Subfamily Spathosterninae Rehn, 1957

Genus *Spathosternum* Krauss, 1877

Spathosternum Krauss, 1877. *S.B. Akad. Wiss. Wien*,

Math.-Nat. Kl. (Abt. 1). 76(1): 44.

Type species: *Tristria nigro-taeniata* Stal, 1876 (= *Spathosternum nigrotaeniatum*). *Ofv. K. Vetensk. Akad. Forh.* 33(3): 45.

Diagnosis: Body of small size. Antennae filiform. Fastigium of vertex parabolic. Frontal ridge sulcate. Dorsum of pronotum flattened; median carina linear; crossed by posterior sulcus only; lateral carinae present; metazona as long as prozona; posterior margin of pronotum rounded. Prosternal process antero-posteriorly compressed, inclined backwards. Mesosternal interspace strongly constricted. Tegmina and wings fully developed; radial area of tegmen with series of regular transverse stridulatory veinlets. Hind femur slender. External apical spine of hind tibia present. Arolium moderately large. Apical abdominal tergite with furcula.

The genus is represented by single species from this region.

***Spathosternum prasiniferum prasiniferum* (Walker, 1871)**
Heteracris prasinifera Walker, 1871. *Cat. Derm. Salt. Br. Mus.* London. 65.

Spathosternum prasiniferum (Walker); Nayeem and Usmani, 2012. *Munis Entomology & Zoology*. 7(1):398.

Material examined: INDIA, Rajasthan, Udaipur, 1♂, 2♀♀, 06-X-2009, on bajra; Dungarpur, 9♂♂, 2♀♀, 09-X-2009, on grasses; Sirohi, 1♂, 02-III-2011, on grasses; Bharatpur, 9♂♂, 5♀♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 16.15; Pronotum: 2.79; Antenna: 4.89; Tegmina: 13.77; Hind Femur: 7.86.

Female: Body: 18.17; Pronotum: 3.58; Antenna: 3.95; Tegmina: 14.75; Hind Femur: 9.43.

Distribution: Jammu & Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Rajasthan, Uttar Pradesh, Bihar, West Bengal, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Karnataka, Kerala, Andhra Pradesh, Arunachal Pradesh and Goa.

Subfamily Hemiacridinae Dirsh, 1956

Genus *Hieroglyphus* Krauss, 1877

Hieroglyphus Krauss, 1877. *S.B. Akad. Wiss. Wien*. Vienna. 76(1): 41.

Type species: *Hieroglyphus daganensis* Krauss, 1877. *Anz. Akad. Wiss. Wien*, 14: 143.

Diagnosis: Body medium to large. Antennae filiform. Fastigium of vertex rounded or trapezoidal. Frontal ridge sulcate. Dorsum of pronotum cylindrical; crossed by three or four deep transverse sulci; median carina weak; lateral carinae absent; metazona shorter than prozona; posterior margin of pronotum obtuse-angular or rounded. Prosternal process acutely conical or bifurcate. Mesosternal interspace elongate. Tegmina or wings fully developed or shortened; radial area of tegmen with series of regular transverse

stridulatory veinlets. Hind femur slender. External apical spine of hind tibia present. Arolium very large.

The genus is represented by single species from this region.

***Hieroglyphus nigrorepletus* Bolivar, 1912**

Hieroglyphus nigrorepletus Bolivar, 1912. *Trab. Mus. Cienc. Nat. madr.* 6: 56.

Material examined: INDIA, Rajasthan, Rajasmand, 5♂♂, 5♀♀, 07-X-2009, on jowar. Himachal Pradesh, Una, 1♂, 31-X-2010, on grasses.

Measurements (length in mm):

Male: Body: 34.03; Pronotum: 7.16; Antenna: 14.34; Tegmina: 28.85; Hind Femur: 15.94.

Female: Body: 43.33; Pronotum: 8.02; Antenna: 12.60; Tegmina: 15.21; Hind Femur: 18.87.

Distribution: Assam, Bihar, Jammu & Kashmir, Karnataka, Maharashtra, Madhya Pradesh, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

Subfamily Tropidopolinae Jacobson, 1905

Genus *Tristria* Stal, 1873

Tristria Stal, 1873. *Revue critique des Orthopteres decrits par Linne, De Geer et Thunberg.* 1: 40, 80.

Type species: *Tristria lacerta* Stal, 1873 (= *pisciforme*). *Revue critique des Orthopteres decrits par Linne, De Geer et Thunberg.* 1: 80.

Diagnosis: Body of medium size. Antennae filiform. Fastigium of vertex with median carinula. Frontal ridge flat. Dorsum of pronotum crossed by three transverse sulci; median and lateral carinae distinct; metazona much shorter than prozona; posterior margin of pronotum truncate. Prosternal process compressed antero-posteriorly, reaching anterior margin of mesosternum, apex rectangular. Mesosternal interspace contiguous for short distance. Tegmina and wings fully developed. Hind femur slender, lower apical knee lobe short and rounded. External apical spine of hind tibia present.

The genus is represented by single species from this region.

***Tristria pulvinata* (Uvarov, 1921)**

Tapinophyma pulvinata Uvarov, 1921. *Ann. Mag. nat. Hist.* 9 (7): 497.

Tristria pulvinata (Uvarov); Nayeem and Usmani, 2012. *Munis Entomology & Zoology.* 7(1): 399.

Material examined: India, Rajasthan, Bharatpur, 4♂♂, 2♀♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 26.15; Pronotum: 4.63; Antenna: 7.10; Tegmina: 20.60; Hind Femur: 14.75.

Female: Body: 38.81; Pronotum: 6.47; Antenna: 7.16; Tegmina: 24.35; Hind Femur: 19.72.

Distribution: Andhra Pradesh, Assam, Bihar, Delhi, Haryana, Karnataka, Kerala, Maharashtra, Meghalaya, Orissa, Punjab, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Subfamily Cyrtacanthacridinae Kirby, 1910

Genus *Cyrtacanthacris* Walker, 1870

Cyrtacanthacris Walker, 1870. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum.* 3: 550.

Type species: *Gryllus tataricus* Linnaeus, 1758 (= *Cyrtacanthacris tatarica tatarica*). *Systema Naturae per Regna tria naturae (10th ed.).* 1: 432.

Diagnosis: Body of large size. Antennae filiform. Fastigium of vertex angular. Frontal ridge narrow, slightly depressed at median ocellus. Dorsum of pronotum crossed by three transverse sulci; median carina low; lateral carinae absent; metazona as long as prozona; posterior margin of pronotum angular. Prosternal process large, widened in middle and gradually narrowing towards subacute apex, strongly curved backwards, touching or nearly touching mesosternum. Mesosternal interspace open, lobes rectangular. Tegmina and wings fully developed. Hind femur slender. External apical spine of hind tibia absent.

The genus is represented by single species from this region.

***Cyrtacanthacris tatarica tatarica* (Linnaeus, 1758)**

Gryllus (Locusta) tataricus Linnaeus, 1758. *Systema Naturae per Regna tria naturae (10th ed.).* 1: 432.

Cyrtacanthacris tatarica tatarica (Linnaeus); Nayeem and Usmani, 2012. *Munis Entomology & Zoology.* 7(1): 400.

Material examined: INDIA, Rajasthan, Udaipur, 1♂, 2♀♀, 06-X-2009, on grasses; Rajasmand, 1♀, 07-X-2009, on jowar.

Measurements (length in mm):

Male: Body: 49.87; Pronotum: 10.53; Antenna: 15.27; Tegmina: 40.51; Hind Femur: 24.65.

Female: Body: 64.44; Pronotum: 14.48; Antenna: 21.08; Tegmina: 60.40; Hind Femur: 33.88.

Distribution: Andhra Pradesh, Arunachal Pradesh, Chhattisgarh, Himachal Pradesh, Karnataka, Kerala, Manipur, Meghalaya, Orissa, Tamil Nadu, Tripura, Uttarakhand, West Bengal, Assam, Bihar, Delhi, Haryana, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

Subfamily Eyprepocnemidinae Brunner, 1893

Keys to genera of Eyprepocnemidinae Brunner, 1893

1. Fastigium of vertex without median carinula; metazona as long as prozona.....*Eyprepocnemis* Fieber, 1853
- Fastigium of vertex with median carinula; metazona shorter than prozona.....*Heteracris* Walker, 1870

Genus *Eyprepocnemis* Fieber, 1853

Eyprepocnemis Fieber, 1853. *Lotos*. 3: 98.

Type species: *Gryllus plorans* Charpentier, 1825. (= *Eyprepocnemis plorans plorans*). *Horae entomologicae, adjectis tabulis novem coloratis*. 134.

Diagnosis: Body of medium size. Antennae filiform. Fastigium of vertex without median carinula. Frontal ridge flat, sometimes with shallow concavity at ocellus. Dorsum of pronotum crossed by three transverse sulci; median and lateral carinae distinct; metazona about as long as prozona; posterior margin of pronotum obtuse angular. Prosternal process cylindrical, slightly bent backwards. Mesosternal interspace open. Tegmina and wings fully developed or shortened.

The genus is represented by single species from this region.

***Eyprepocnemis alacris alacris* (Serville, 1838)**

Acridium alacre Serville, 1838. *Histoire naturelle des insectes. Orthopteres*. 682.

Eyprepocnemis alacris alacris (Serville); Nayeem and Usmani, 2012. *Munis Entomology & Zoology*. 7(1): 402.

Material examined: INDIA, Rajasthan, Nagaur, 1♀, 03-X-2009, on jowar; Bharatpur, 19♂♂, 10♀♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 25.12; Pronotum: 4.81; Antenna: 9.38; Tegmina: 23.40; Hind Femur: 14.52.

Female: Body: 33.79; Pronotum: 6.19; Antenna: 10.52; Tegmina: 28.25; Hind Femur: 19.04.

Distribution: Tamil Nadu, Uttar Pradesh, Assam, Manipur, Meghalaya, Kerala, Andhra Pradesh, Punjab, Haryana, Rajasthan, Himachal Pradesh, Jammu & Kashmir, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Goa, Karnataka, Madhya Pradesh, Orissa, Sikkim, Tripura, West Bengal and Maharashtra.

Genus *Heteracris* Walker, 1870

Heteracris Walker, 1870. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum*. 4: 655.

Type species: *Acridium herbacea* Serville, 1838. *Histoire naturelle des insectes. Orthopteres*. 684.

Diagnosis: Body of medium to large size. Antennae filiform. Fastigium of vertex with median and lateral carinulae. Frontal ridge flat and of medium width. Dorsum of pronotum crossed by three transverse sulci with sharp median and lateral carinae; metazona slightly shorter than prozona; posterior margin of pronotum broadly rounded. Prosternal process subcylindrical or slightly antero-posteriorly compressed, slightly inclined backwards. Mesosternal interspace open. Tegmina and wings fully developed or shortened.

The genus is represented by two species from this region. A

key for their separation is given below:

Key to Indian species of *Heteracris* Walker, 1870

1. Prosternal process antero-posteriorly compressed with slightly transverse apex.....*H. littoralis* (Rambur, 1838)
- Prosternal process subcylindrical with obtuse apex.....*H. pulcher* (Bolivar, 1902)

***Heteracris littoralis* (Rambur, 1838)**

Gryllus littoralis Rambur, 1838. *Faune entomologique de l'Andalousie. Orthoptera 3(Orth. 2)*. 78.

Heteracris littoralis (Rambur); Usmani, 2008. *Zootaxa*, 1946: 22.

Material examined: INDIA, Rajasthan, Bikaner, 1♂, 05-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 26.14; Pronotum: 4.59; Antenna: 10.99; Tegmina: 21.87; Hind Femur: 15.35.

Female: Body: 42.78; Pronotum: 7.07; Antenna: 13.76; Tegmina: 35.07; Hind Femur: 22.16.

Distribution: Bihar, Delhi, Rajasthan, Punjab, Haryana and Uttarakhand.

***Heteracris pulcher* (Bolivar, 1902)**

Eyprepocnemis pulcher Bolivar, 1902. *Ann. Soc. ent. Fr.* 70: 630.

Heteracris pulcher (Bolivar); Dirsh, 1958. *Tijdschr. v. Entomologie*. 101: 54.

Material examined: INDIA, Rajasthan, Bikaner, 3♂♂, 5♀♀, 05-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 22.19; Pronotum: 4.31; Antenna: 11.15; Tegmina: 20.58; Hind Femur: 14.21.

Female: Body: 42.54; Pronotum: 6.85; Antenna: 13.72; Tegmina: 35.22; Hind Femur: 21.86.

Distribution: Andhra Pradesh, Bihar, Delhi, Orissa, Tamil Nadu, Uttarakhand, Rajasthan and West Bengal.

Subfamily Catantopinae Brunner, 1893

Key to genera of Catantopinae Brunner, 1893

1. Lateral carina of pronotum absent.....**2**
- Lateral carina of pronotum present.....*Choroedocus* Bolivar, 1914
2. Pronotum constricted in prozona.....*Xenocatantops* Dirsh, 1953
- Pronotum never constricted in prozona.....*Diabolocatantops* Jago, 1984

Genus *Choroedocus* Bolivar, 1914

Choroedocus Bolivar, 1914. *Trab. Mus. Cienc. nat., Madrid (Ser. zool.)*. 20: 8.

Type species: *Gryllus capensis* Thunberg, 1815. *Mem. Acad. Imp. Sci. St. Petersburg*. 5: 240.

Diagnosis: Body of large size. Antennae filiform. Fastigium of vertex with a complete or incomplete median carinula. Frontal ridge broad and flat or convex. Dorsum of pronotum crossed by three transverse sulci; median and lateral carinae well developed; metazona about as long as prozona; posterior margin of pronotum rounded. Prosternal process long and cylindrical, curved backwards. Mesosternal interspace open. Tegmina and wings fully developed. Apex of male abdomen inflated.

The genus is represented by single species from this region.

***Choroedocus capensis* (Thunberg, 1815)**

Gryllus capensis Thunberg, 1815. *Mem. Acad. Imp. Sci. St. Petersburg*. 5: 240.

Choroedocus capensis (Thunberg); Bolivar, 1914. *Trab. Mus. Cienc. nat., Madrid (Ser. zool.)*. 20: 9, 20.

Material examined: INDIA, Rajasthan, Jalor, 1♀, 03-III-2011, on grasses.

Measurements (length in mm):

Female: Body: 57.60; Pronotum: 11.14; Antenna: 13.90; Tegmina: 55.86; Hind Femur: 40.71.

Distribution: Delhi, Himachal Pradesh, Tamil Nadu, Uttarakhand, West Bengal and Rajasthan.

Genus *Xenocatantops* Dirsh & Uvarov, 1953

Xenocatantops Dirsh and Uvarov, 1953. *Tijdschr. v. Entomologie*. 96: 237.

Type species: *Acridium humile* Serville, 1838 (= *Xenocatantops humilis*). *Histoire naturelle des insectes. Orthopteres*. 662.

Diagnosis: Body of medium size. Antennae filiform. Fastigium of vertex angular; without median carinula. Frontal ridge narrow and weakly sulcate or flat. Dorsum of pronotum tectiform, slightly constricted in prozona; crossed by three transverse sulci; median carina weak; lateral carinae absent; metazona as long as or longer than prozona; posterior margin of pronotum obtuse angular. Prosternal process cylindrical, apex obtuse or slightly flat. Mesosternal interspace open. Tegmina and wings fully developed.

The genus is represented by single species from this region.

***Xenocatantops karnyi* (Kirby, 1910)**

Catantops karnyi Kirby, 1910. *A Synonymic Catalogue of Orthoptera (Orthoptera Saltatoria, Locustidae vel Acridiidae)*. 3(2): 483.

Xenocatantops karnyi (Kirby); Jago, 1982. *Trans. Amer. Entomol. Soc.* 108(4): 454.

Material examined: INDIA, Rajasthan, Udaipur, 2♂♂, 2♀♀, 06-X-2009, on bajra; Rajasmand, 1♂, 3♀♀, 07-X-2009, on grasses.

Measurements (length in mm):

Male: Body: 22.72; Pronotum: 4.41; Antenna: 7.51; Tegmina: 18.08; Hind Femur: 11.06.

Female: Body: 28.20; Pronotum: 6.26; Antenna: 9.09; Tegmina: 22.58; Hind Femur: 14.10.

Distribution: Andhra Pradesh, Haryana, Rajasthan, Jammu and Kashmir, Arunachal Pradesh, Assam, Chhattisgarh, Delhi, Himachal Pradesh, Maharashtra, Orissa, Tamil Nadu, Tripura, Uttarakhand and Uttar Pradesh.

Genus *Diabolocatantops* Jago, 1984

Diabolocatantops Jago, 1984. *Trans. Amer. Entomol. Soc.* 110(3): 295.

Type species: *Gryllus axillaris* Thunberg, 1815 (= *Diabolocatantops axillaris axillaris*). *Mem. Acad. Imp. Sci. St. Petersburg*. 5: 250.

Diagnosis: Body medium to large size. Antennae filiform. Fastigium of vertex trapezoidal; without median carinula. Frontal ridge broad and flat. Dorsum of pronotum flat; crossed by three transverse sulci; median carina weak; lateral carinae absent; metazona longer than prozona; posterior margin of pronotum obtuse angular. Prosternal process cylindrical with flat apex. Mesosternal interspace open. Tegmina and wings fully developed.

The genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Diabolocatantops* Jago, 1984

1. Tegmina with cubital area almost equal to the medial area; aedeagus, apical valve with rounded apex; ovipositor, dorsal valve shorter than lateral apodeme.....*D. pinguis* (Stal, 1861)
- Tegmina with cubital area wider than the medial area; aedeagus, apical valve with pointed apex; ovipositor, dorsal valve longer than lateral apodeme.....*D. innotabilis* (Walker, 1870)

***Diabolocatantops pinguis* (Stal, 1861)**

Acridium pingue Stal, 1861. *Kongliga Svenska fregatten Eugenie Resa omkring jorden under befal af C.A. Virgin aren 1851-1853 (Zoologi)*. 2(1): 330.

Diabolocatantops pinguis (Stal); Jago, 1984. *Trans. Amer. Entomol. Soc.* 110(3): 370.

Material examined: INDIA, Rajasthan, Udaipur, 1♀, 06-X-2009, on bajra; Ajmer, 2♂♂, 1♀, 08-III-2011, on grasses; Bharatpur, 1♂, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 26.21; Pronotum: 5.74; Antenna: 8.92; Tegmina: 24.31; Hind Femur: 12.66.

Female: Body: 38.50; Pronotum: 7.02; Antenna: 9.08; Tegmina: 31.95; Hind Femur: 16.54.

Distribution: Sikkim, Kerala, Manipur, Tamil Nadu, Jammu & Kashmir, Punjab and Rajasthan.

Diabolocatantops innotabilis (Walker, 1870)

Acridium innotabile Walker, 1870. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum*. 4: 629.

Diabolocatantops innotabilis (Walker); Jago, 1984. *Trans. Amer. Entomol. Soc.* 110(3): 371.

Material examined: INDIA, Rajasthan, Udaipur, 9♂♂, 8♀♀, 06-X-2009, on bajra; Rajasmand, 2♂♂, 1♀, 07-X-2009, on grasses; 2♂♂, 2♀♀, 07-X-2009, on jowar; Banswara, 10♂♂, 8♀♀, 08-X-2009, on grasses.

Measurements (length in mm):

Male: Body: 27.77; Pronotum: 5.99; Antenna: 10.16; Tegmina: 25.24; Hind Femur: 14.64.

Female: Body: 37.73; Pronotum: 8.47; Antenna: 10.19; Tegmina: 34.53; Hind Femur: 19.17.

Distribution: Orissa, Goa, Uttar Pradesh, Tamil Nadu, Arunachal Pradesh, Assam, Andhra Pradesh, Delhi, Bihar, Chhattisgarh, Himachal Pradesh, Jammu & Kashmir, Haryana, Karnataka, Kerala, Meghalaya, Manipur, Maharashtra, Madhya Pradesh, Rajasthan, Nagaland, Sikkim and West Bengal.

Subfamily Oedipodinae Walker, 1871: The subfamily Oedipodinae is represented by eight genera from this region. A key for their separation is given below:

Keys to genera of Oedipodinae Walker, 1871

1. Dorsum of pronotum without X-shaped pattern.....2
- Dorsum of pronotum with X-shaped pattern.....*Oedaleus* Fieber, 1853
2. Pronotum with median carina crossed by more than one transverse sulci.....3
- Pronotum with median carina crossed by one transverse sulcus or not crossed at all.....7
3. Pronotum with median carina equally raised in prozona and metazona, not forming tooth like projection.....4
- Pronotum with median carina strongly raised in prozona forming two tooth like projections, sharp in metazona.....*Trilophidia* Stal, 1873
4. Body large and robust; tegmina with apex broad; pronotum slightly convex, apex angular.....5
- Body medium to small size; tegmina with apex narrow; pronotum saddle shaped, apex rounded.....*Bryodema* Fieber, 1853
5. Fastigium of vertex with median carinula; pronotum longer than its width, with median carina linear, lateral carinae absent.....6
- Fastigium of vertex without median carinula; pronotum as long as or shorter than its width, with median carina well developed, lateral carinae irregular, tuberculate, sometimes absent in metazona.....*Acrotylus* Fieber, 1853
6. Frontal ridge flat; pronotum slightly rugulose, metazona

longer than prozona, posterior margin obtuse angular; mesosternal intrspace wider than long; hind femora slender.....*Sphingonotus* Fieber, 1852

- Frontal ridge sulcate; pronotum very rugulose, metazona much longer than prozona, posterior margin elongate angular; mesosternal intrspace much wider than long; hind femora very broad with the upper carina particularly expanded and suddenly depressed near the apex.....*Chondronotulus* Uvarov, 1956
- 7. Pronotum with median carina weak.....*Aiolopus* Fieber, 1853
- Pronotum with median carina well developed.....*Locusta* Linnaeus, 1758

Genus Oedaleus Fieber, 1853

Oedipoda (Oedaleus) Fieber, 1853. *Lotos*. 3: 126.

Type species: *Acrydium decorus* Germar, 1825. *Faun. Ins. Eur.* 15 pl. 10: 12, tab. 17.

Diagnosis: Body small to medium size. Antennae filiform. Fastigium of vertex without median carinula. Frontal ridge flat or shallowly sulcate. Dorsum of pronotum crossed by posterior transverse sulcus only; longer than its width; with X-shaped pattern; median carina obtuse; lateral carinae absent; metazona slightly longer than prozona; posterior margin of pronotum from acute-angular to rounded. Mesosternal interspace much wider than long. Tegmina and wings fully developed. Hind femur slender. Arolium of small size.

The genus is represented by single species from this region.

Oedaleus abruptus (Thunberg, 1815)

Gryllus abruptus Thunberg, 1815. *Mem. Acad. Imp. Sci. St. Peterburg*. 5: 233.

Oedaleus abruptus (Thunberg); Bolivar, 1902. *Ann. Soc. ent. Fr.* 70: 602.

Material examined: India, Rajasthan, Udaipur, 3♂♂, 7♀♀, 06-X-2009, on bajra; Rajasmand, 3♂♂, 1♀, 07-X-2009, on grasses; 2♀♀, 07-X-2009, on jowar; Banswara, 27♂♂, 19♀♀, 08-X-2009, on grasses; Sirohi, 1♀, 02-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 15.21; Pronotum: 2.97; Antenna: 7.20; Tegmina: 15.40; Hind Femur: 8.52.

Female: Body: 23.61; Pronotum: 3.47; Antenna: 6.91; Tegmina: 18.00; Hind Femur: 10.73.

Distribution: Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Orissa, Pondicherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Genus Trilophidia Stal, 1873

Trilophidia Stal, 1873. *Recencio Orthopterorum. Revue critique des Orthopteres decrits par Linne, De Geer et*

Thunberg. 1: 117, 131.

Type-species: *Oedipoda cristella* Stal, 1860. *Kongliga Svenska fregatten Eugenie Resa omkring jorden under befäl af C.A. Virgin aren 1851-1853 (Zoologi)*. 2(1): 344.

Diagnosis: Body of small size. Antennae filiform. Fastigium of vertex without median carinula. Frontal ridge sulcate. Dorsum of pronotum crossed by two transverse sulci; longer than its width; median carina strongly raised forming two high tooth-like projections in prozona, in metazona sharp; lateral carinae irregular, forming small tooth-like lateral tubercles in front of first sulcus, strongly diverging and sometimes weak in metazona; metazona longer than prozona; posterior margin of pronotum angular. Mesosternal interspace much wider than long. Tegmina and wings fully developed. Hind femur moderately robust. Arolium small.

This genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Trilophidia* Stal, 1873

1. Body of small size; inner side of hind femur with only one complete pale band; basal disc of wings hyaline; hind tibia with two narrow ochraceous rings.....*T. annulata* (Thunberg, 1815)
- Body of medium size; inner side of hind femur with two pale bands; basal disc of wings yellow; hind tibia with two broad ochraceous rings.....*T. repleta* (Walker, 1870)

***Trilophidia annulata* (Thunberg, 1815)**

Gryllus annulatus Thunberg, 1815. *Mem. Acad. Imp. Sci. St. Petersburg*. 5: 234.

Trilophidia annulata (Thunberg); Bolivar, 1902. *Ann. Soc. ent. Fr.* 70: 604.

Material examined: INDIA, Rajasthan, Udaipur, 2♂♂, 2♀♀, 06-X-2009, on bajra; Rajasmand, 1♂, 07-X-2009, on grasses; Dungarpur, 2♀♀, 09-X-2009, on grasses; Sirohi, 1♀, 02-III-2011, on grasses; Pali, 2♂♂, 04-III-2011, on grasses; 12♂♂, Bharatpur, 1♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 16.42; Pronotum: 3.37; Antenna: 6.47; Tegmina: 17.18; Hind Femur: 8.66.

Female: Body: 21.63; Pronotum: 3.79; Antenna: 6.05; Tegmina: 19.01; Hind Femur: 9.43.

Distribution: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttarakhand, Goa, Tamil Nadu, Uttar Pradesh, Kerala and West Bengal.

***Trilophidia repleta* (Walker, 1870)**

Epacromia repleta Walker, 1870. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum*. 4: 770.

Trilophidia repleta (Walker); Uvarov, 1925. *Trans. Entomol. Soc. London*. 3-4: 279.

Material examined: INDIA, Rajasthan, Udaipur, 1♀, 06-X-2009, on bajra; Dungarpur, 1♀, 09-X-2009, on grasses.

Measurements (length in mm):

Female: Body: 21.59; Pronotum: 3.88; Antenna: 5.81; Tegmina: 19.27; Hind Femur: 9.29.

Distribution: Punjab, Arunachal Pradesh, Jammu & Kashmir, Haryana and Rajasthan.

Genus *Bryodema* Fieber, 1853

Bryodema Fieber, 1853. *Lotos*. 3: 129.

Type species: *Oedipoda gebleri* Fischer, 1836. *Bull. Soc. imp. natur. Moscou*. 9: 346.

Diagnosis: Body of medium size. Antennae filiform. Fastigium of vertex angular without median carinula. Frontal ridge broad and sulcate. Dorsum of pronotum crossed by posterior transverse sulcus only; as long as or shorter than its width; median carina distinct; lateral carinae irregular or tuberculated; metazona longer than prozona; posterior margin of pronotum rounded. Mesosternal interspace much wider than long. Tegmina and wings fully developed. Hind femur slender. Arolium of small size. The genus is represented by single species from this region.

***Bryodema luctuosa inda* Saussure, 1884**

Bryodema inda Saussure, 1884. *Mem. Soc. Phys. Hist. Nat. Geneve*. 28(9): 181.

Bryodema luctuosum inda (Saussure); Bey-Bienko, 1930. *Ann. Mus. Zool. Acad. Imp. Sciences St. Petersburg*. 31(1): 116.

Material examined: INDIA, Rajasthan, Sirohi, 1♂, 02-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 15.17; Pronotum: 2.73; Antenna: 5.99; Tegmina: 17.70; Hind Femur: 9.45.

Distribution: Jammu & Kashmir, Himachal Pradesh and Rajasthan.

Genus *Acrotylus* Fieber, 1853

Acrotylus Fieber, 1853. *Lotos*. 3: 125.

Type species: *Gryllus insubricus* Scopoli, 1786. *Delicidae forae et faunae insubricae pars-I*. 64.

Diagnosis: Body small to medium size. Antennae filiform. Fastigium of vertex without median carinula. Frontal ridge sulcate. Dorsum of pronotum crossed by posterior transverse sulcus only; as long as or shorter than its width; strongly tuberculate; median carina well developed; lateral carinae irregular and tuberculate, sometimes absent in metazona; metazona longer than prozona; posterior margin of pronotum rounded. Mesosternal interspace much wider than long. Tegmina and wings fully developed. Hind femur

slender. Arolium small.

The genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Acrotylus* Fieber, 1853

1. Tegmina with discoidal area hyaline beyond middle; wings with semilunar fascia on disc; lateral areas on posterior transverse sulcus of pronotum without callous spots; ovipositor valves with tips acute; legs with dense fine hairs.....*A. humberianus* Saussure, 1884
- Tegmina with discoidal area bearing infuscated spots beyond middle; wings with broad lunate fascia on disc; lateral areas on posterior transverse sulcus of pronotum with callous spots; ovipositor valves with tips blunt; legs with sparse fine hairs.....*A. insubricus insubricus* (Scopoli, 1786)

***Acrotylus humberianus* Saussure, 1884**

Acrotylus humberianus Saussure, 1884, *Mem. Soc. Phys. Geneve.* 28 (9): 189.

Material examined: INDIA, Rajasthan, Jaisalmer, 14♂♂, 22♀♀, 28-II-2011, on grasses; Barmer, 18♂♂, 13♀♀, 3 nymphs, 01-III-2011, on grasses; Sirohi, 1♂, 02-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 14.63; Pronotum: 2.45; Antenna: 5.86; Tegmina: 17.02; Hind Femur: 8.60.

Female: Body: 19.39; Pronotum: 2.82; Antenna: 5.90; Tegmina: 19.26; Hind Femur: 9.29.

Distribution: Andhra Pradesh, Bihar, Goa, Maharashtra, Rajasthan, Tamil Nadu, Uttar Pradesh, Chhattisgarh, Delhi, Haryana, Himachal Pradesh, Madhya Pradesh, Punjab, Tripura and West Bengal.

***Acrotylus insubricus insubricus* (Scopoli, 1786)**

Gryllus insubricus Scopoli, 1786. *Delicidae forae et faunae insubricae pars-I.* 64.

Acrotylus insubricus (Scopoli); Bolivar, 1876. *An. Soc. Espan. Hist. Nat.* 5: 362.

Material examined: INDIA, Rajasthan, Nagaur, 4♂♂, 4♀♀, 03-X-2009, on jowar; Nagaur, 1♂, 2♀♀, 03-X-2009, on Bajra; Udaipur, 1♂, 1♀, 06-X-2009, on bajra; Jalor, 1♂, 4♀♀, 03-III-2011, on grasses; Pali, 4♂♂, 04-III-2011, on grasses; Bikaner, 8♂♂, 10♀♀, 05-III-2011, on grasses; Hanumangarh, 40♂♂, 19♀♀, 06-III-2011, on grasses; Sikar, 12♂♂, 3♀♀, 07-III-2011, on grasses; Ajmer, 5♂♂, 4♀♀, 08-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 14.04; Pronotum: 2.24; Antenna: 5.51; Tegmina: 15.77; Hind Femur: 8.30.

Female: Body: 21.96; Pronotum: 2.92; Antenna: 7.60; Tegmina: 21.90; Hind Femur: 10.08.

Distribution: Punjab, Rajasthan, Jammu & Kashmir, Himachal Pradesh, Orissa and West Bengal.

Genus *Sphingonotus* Fieber, 1852

Sphingonotus Fieber, 1852. In *Kelch. Grundlage zur Kenntnis der Orthopteren (Gradflugler) Oberschlesiens, und Grundlage zur Kenntnis der Kafer Oberschlesiens, erster Nachtrag (Schulprogr.). Ratibor.* 2.

Type species: *Gryllus coeruleus* Linnaeus, 1767 (= *Sphingonotus caeruleus caeruleus*). *Caroli a Linne Systema Naturae I, pt. 2:* 701.

Diagnosis: Body small to medium size. Antennae filiform. Fastigium of vertex with median and lateral carinulae. Frontal ridge flat. Dorsum of pronotum crossed by two transverse sulci; longer than its width; median carina linear; lateral carinae absent; metazona longer than prozona; posterior margin of pronotum obtuse-angular. Mesosternal interspace wider than long. Tegmina and wings fully developed. Hind femur slender. Arolium of small size.

The genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Sphingonotus* Fieber, 1852

1. Wings without a dark transverse band; tegmina, intercalary vein curved and approaching M1 at apex.....*S. rubescens rubescens* (Walker, 1870)
- Wings with dark transverse band extending from costa to anal angle; tegmina, intercalary vein curved but not approaching M1 at apex..... *S. savignyi savignyi* Saussure, 1884

***Sphingonotus rubescens rubescens* (Walker, 1870)**

Oedipoda rubescens Walker, 1870. *Zoologist.* 2-5(28): 2301.

Sphingonotus rubescens rubescens (Walker); Massa, 2009. *Jour. Orth. Res.* 18(1): 84.

Material examined: INDIA, Rajasthan, Jaisalmer, 17♂♂, 5♀♀, 28-II-2011, on grasses.

Measurements (length in mm):

Male: Body: 20.16; Pronotum: 3.63; Antenna: 7.43; Tegmina: 22.43; Hind Femur: 9.48.

Female: Body: 34.63; Pronotum: 5.21; Antenna: 9.98; Tegmina: 31.45; Hind Femur: 13.27.

Distribution: Jammu & Kashmir, Rajasthan.

***Sphingonotus savignyi savignyi* Saussure, 1884**

Sphingonotus savignyi Saussure, 1884. *Mem. Soc. Phys. Hist. Nat. Geneve.* 28(9): 198.

Sphingonotus savignyi savignyi Saussure; Massa, 2009. *Jour. Orth. Res.* 18(1): 84.

Material examined: INDIA, Rajasthan, Nagaur, 3♂♂, 2♀♀, 03-X-2009, on Bajra; Jaisalmer, 2♂♂, 2♀♀, 28-II-2011, on grasses.

Measurements (length in mm):

Male: Body: 23.14; Pronotum: 3.94; Antenna: 8.09; Tegmina: 24.10; Hind Femur: 9.33.

Female: Body: 31.83; Pronotum: 5.36; Antenna: 8.66; Tegmina: 27.98; Hind Femur: 14.15.

Distribution: Jammu & Kashmir, Himachal Pradesh and Rajasthan.

Genus Chondronotulus Uvarov, 1956

Chondronotulus Uvarov, 1956. *Ent. Monthly Mag.* 92: 217.

Type species: *Sphingonotus bengalensis* Saussure, 1888. *Mem. Soc. Phys. Hist. Nat. Geneve.* 30(1): 77, 80.

Diagnosis: Small to medium size. Antennae filiform. Fastigium of vertex with weak median and well developed lateral carinulae. Frontal ridge broad and sulcate. Dorsum of pronotum crossed by posterior two transverse sulci; as long as or longer than its width; median carina linear; lateral carinae absent; metazona much longer than prozona; posterior margin of pronotum elongate angular. Mesosternal interspace much wider than long. Tegmina and wings fully developed. Hind femur slender with upper carina deeply concave just before knee lobe. Arolium of small size.

***Chondronotulus bengalensis* (Saussure, 1888)**

Sphingonotus bengalensis Saussure, 1888. *Mem. Soc. Phys. Hist. Nat. Geneve.* 30(1): 77, 80.

***Chondronotulus bengalensis* (Saussure); Uvarov, 1956.** *Ent. Monthly Mag.* 92: 217.

Material examined: INDIA, Rajasthan, Banswara, 2♀♀, 08-X-2009, on grasses.

Measurements (length in mm):

Female: Body: 20.54; Pronotum: 4.80; Antenna: 6.78; Tegmina: 19.67; Hind Femur: 11.05.

Distribution: Madhya Pradesh, Maharashtra, West Bengal and Rajasthan.

Genus *Aiolopus* Fieber, 1853

Aiolopus Fieber, 1853, *Lotos.* 3: 100.

Type-species: *Gryllus thalassinus* Fabricius, 1781. *Species Insectorum.* 1: 367.

Diagnosis: Body of medium size. Antennae filiform. Fastigium of vertex without median carinula. Frontal ridge flat. Dorsum of pronotum crossed by posterior transverse sulcus only; longer than its width; median carina weak; lateral carinae absent; metazona distinctly longer than prozona; posterior margin of pronotum obtuse-angular. Mesosternal interspace slightly wider than long. Tegmina and wings fully developed. Hind femur slender. Arolium of small size.

The genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Aiolopus* Fieber, 1853

1. Hind femora short and stout, as wide as width of tegmina; pronotum weakly narrowed and moderately constricted in prozona.....*A. simulatrix simulatrix* (Walker, 1870)
 - Hind femora long and slender, narrower than width of tegmina; pronotum saddle shaped, distinctly narrowed and constricted in Prozona.....*A. thalassinus tamulus* (Fabricius, 1798)

***Aiolopus simulatrix simulatrix* (Walker, 1870)**

Epacromia simulatrix Walker, 1870. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum.* 4: 773.

***Aiolopus simulatrix simulatrix* (Walker); Hollis, 1968.** *Bull. Br. Mus. (Nat. Hist.) Ent.* 22(7): 320.

Material examined: INDIA, Rajasthan, Nagaur, 1♀, 03-X-2009, on jowar; Udaipur, 2♂♂, 1♀, 06-X-2009, on bajra; Banswara, 1♀, 08-X-2009, on grasses; Sirohi, 1♂, 02-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 16.35; Pronotum: 3.12; Antenna: 5.90; Tegmina: 17.02; Hind Femur: 9.19.

Female: Body: 24.50; Pronotum: 4.35; Antenna: 7.13; Tegmina: 23.97; Hind Femur: 13.30.

Distribution: Andaman & Nikobar Islands, Bihar, Delhi, Jammu & Kashmir, Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Punjab, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

***Aiolopus thalassinus tamulus* (Fabricius, 1798)**

Gryllus tamulus Fabricius, 1798. *Supplementum Entomologiae Systematicae Suppl.* 195.

***Aiolopus thalassinus tumulus* (Fabricius); Hollis, 1968.** *Bull. Br. Mus. (Nat. Hist.) Ent.* 22(7): 347.

Material examined: INDIA, Rajasthan, Nagaur, 1♀, 03-X-2009, on Bajra; Udaipur, 1♀, 06-X-2009, on bajra; Jalor, 1♀, 03-III-2011, on grasses; Pali, 3♂♂, 2♀♀, 04-III-2011, on grasses; Ajmer, 1♂, 08-III-2011, on grasses; Bharatpur, 2♂♂, 9♀♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 14.82; Pronotum: 2.90; Antenna: 5.99; Tegmina: 17.20; Hind Femur: 9.34.

Female: Body: 21.32; Pronotum: 3.58; Antenna: 6.15; Tegmina: 19.09; Hind Femur: 10.71.

Distribution: Andaman and Nicobar Islands, Andhra Pradesh, Punjab, Rajasthan, Arunachal Pradesh, Bihar, Chattisgarh, Delhi, Haryana, Himachal Pradesh, Karnataka, Kerala and Madhya Pradesh.

Genus *Locusta* Linnaeus, 1758

Gryllus (Locusta) Linnaeus, 1758. *Systema Naturae per Regna tria naturae (10th ed.)*. 1: 431.

Type species: *Gryllus migratorius* Linnaeus, 1758 (= *Locusta migratoria migratoria*). *Systema Naturae per Regna tria naturae* (10th ed.). 1: 431.

Diagnosis: Body of large size. Antennae filiform. Fastigium of vertex with median and lateral carinulae. Frontal ridge flat. Pronotum strongly tectiform; longer than its width; median carina equally raised in prozona and metazona, slightly excised at posterior transverse sulcus; lateral carinae absent; metazona slightly longer than prozona; posterior margin of pronotum obtuse-angular. Mesosternal interspace as long as wide. Tegmina and wings fully developed. Hind femur slender. Arolium of small size.

The genus is represented by single species from this region.

***Locusta migratoria migratoria* (Linnaeus, 1758)**

Gryllus (Locusta) migratorius Linnaeus, 1758. *Systema Naturae per Regna tria naturae* (10th ed.). 1: 432.

Locusta migratoria migratoria (Linnaeus); Nayeem and Usmani, 2012. *Munis Entomology & Zoology*. 7(1): 408.

Material examined: INDIA, Rajasthan, Banswara, 1♂, 1♀, 08-X-2009, on grasses.

Measurements (length in mm):

Male: Body: 34.84; Pronotum: 8.35; Antenna: 12.36; Tegmina: 41.17; Hind Femur: 21.25.

Female: Body: 46.04; Pronotum: 10.59; Antenna: 13.78; Tegmina: 56.99; Hind Femur: 29.40.

Distribution: Himachal Pradesh, Meghalaya, Orissa and Rajasthan.

Subfamily Acridinae Macleay, 1821

The subfamily is represented by three genera from this region. A key for their separation is given below:

Keys to genera of Acridinae Macleay, 1821

1. Inner side of hind femur without stridulatory files.....**2**
- Inner side of hind femur with stridulatory files.....*Truxalis* Fabricius, 1775
2. Head elongate; hind femur very long and slender.....*Acrida* Linnaeus, 1758
- Head never elongate; hind femur never very long and slender.....*Phlaeoba* Stal, 1861

Genus *Truxalis* Fabricius, 1775

Truxalis Fabricius, 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. 279.

Type species: *Gryllus nasutus* Linnaeus, 1758 (= *Truxalis nasuta*). *Systema Naturae per Regna tria naturae* (10th ed.). 1: 427.

Diagnosis: Body large, strongly elongate and stick-like. Antennae ensiform. Head very elongate; acutely conical.

Fastigium of vertex elongate. Frontal ridge shallowly sulcate. Dorsum of pronotum crossed by posterior sulcus only, with well-developed median and lateral carinae; metazona as long as or slightly shorter than prozona; posterior margin of pronotum angular. Mesosternal interspace open. Tegmina and wings fully developed. Hind femur very elongate and narrow; inner side with stridulatory file. Arolium of medium size.

The genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Truxalis* Fabricius, 1775

1. Area discoidalis of tegmina green or brown with a row of blackish brown spots along the vena ulnaris anterior, this row often bordered by a lighter coloured stripe; posterior margin of subgenital plate with median lobe shorter than lateral lobes; epiphallus with lophi close to each other; wings in females pink or purplish basally.....*T. nasuta* (Linnaeus, 1758)
- Area discoidalis of tegmina green without a row of blackish brown spots; posterior margin of subgenital plate with median lobe as long as lateral lobes; epiphallus with lophi distinctly separate; wings in females purplish blue
Basally.....*T. eximia eximia* Eichwald, 1830

***Truxalis nasuta* (Linnaeus, 1758)**

Gryllus (Acrida) nasutus Linnaeus, 1758. *Systema Naturae per Regna tria naturae* (10th ed.). 1: 427.

Truxalis nasuta (Linnaeus); Massa, 2009. *Jour. Orth. Res.* 18(1): 87.

Material examined: INDIA, Rajasthan, Jalore, 1♀, 1 nymph, 03-III-2011, on grasses; Pali, 3♂♂, 04-III-2011, on grasses; Bikaner, 1 nymph, 05-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 35.55; Pronotum: 5.13; Antenna: 12.48; Tegmina: 29.56; Hind Femur: 21.69.

Female: Body: 47.11; Pronotum: 8.37; Antenna: 13.51; Tegmina: 40.27; Hind Femur: 28.04.

Distribution: Jammu & Kashmir, Uttar Pradesh, Punjab and Rajasthan.

***Truxalis eximia eximia* Eichwald, 1830**

Truxalis eximius Eichwald, 1830. *Zool. Spec.* 2: 239.

Truxalis eximia eximia Eichwald; Unal, 2006. *Priamus*. 3: 26.

Material examined: INDIA, Rajasthan, Nagaur, 1♀, 03-X-2009, on jowar; Jaisalmer, 1♂, 1♀, 2 nymphs, 28-II-2011, on grasses.

Measurements (length in mm):

Male: Body: 38.98; Pronotum: 5.97; Antenna: 13.49; Tegmina: 32.85; Hind Femur: 24.13.

Female: Body: 68.05; Pronotum: 9.73; Antenna: 21.36; Tegmina: 51.29; Hind Femur: 40.95.

Distribution: Rajasthan and Uttar Pradesh.

Genus *Acrida* Linnaeus, 1758

Gryllus (Acrida) Linnaeus, 1758. *Systema Naturae per Regna tria naturae (10th ed.)*. 1: 427.

Type species: *Gryllus turritus* Linnaeus, 1758 (= *Acrida turrita*). *Systema Naturae per Regna tria naturae (10th ed.)*. 1: 427.

Diagnosis: Body large and strongly elongate. Antennae ensiform. Head strongly elongate, ascending conically. Fastigium of vertex elongate. Frontal ridge shallowly sulcate. Dorsum of pronotum crossed by posterior transverse sulcus; median and lateral carina well developed; metazona about as long as prozona; posterior margin of pronotum obtuse or acute angular. Mesosternal interspace open. Tegmina and wings fully developed. Hind femur very long and slender; inner side without stridulatory file. Arolium large.

The genus is represented by two species from this region. A key for their separation is given below:

Key to species of *Acrida* Linnaeus, 1758

1. Body greenish; lateral carina of pronotum not edged within with black line; tegmina without distinct coloured arrangement; apical diverticulum of spermatheca with rounded apex.....*A. exaltata* (Walker, 1859)
- Body dry grass coloured; lateral carina of pronotum edged within with black line; tegmina very normally edged with pinkish brown; apical diverticulum of spermatheca with truncated Apex.....*A. gigantea* (Herbst, 1786)

***Acrida exaltata* (Walker, 1859)**

Truxalis exaltata Walker, 1859. *Ann. Nat. Hist.* (3)4: 222.

Acrida exaltata (Walker); Kirby, 1910. *A Synonymic Catalogue of Orthoptera (Orthoptera Saltatoria, Locustidae vel Acridiidae)*. 3(2): 94.

Material examined: INDIA, Rajasthan, Bharatpur, 2♂♂, 1 nymph, 10-III-2011, on grasses. **Measurements (length in mm):**

Male: Body: 3; Pronotum: 5.10; Antenna: 12.81; Tegmina: 27.81; Hind Femur: 20.11.

Female: Body: 49.67; Pronotum: 7.72; Antenna: 11.59; Tegmina: 37.89; Hind Femur: 26.76.

Distribution: Sikkim, Jammu & Kashmir, Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, West Bengal, Assam and Uttar Pradesh.

***Acrida gigantea* (Herbst, 1786)**

Truxalis giganteus Herbst, 1786. *Herausgegeben von Johan Caspar Fuessly*. 7-8: 191.

Acrida gigantea (Herbst); Kirby, 1910. *A Synonymic Catalogue of Orthoptera (Orthoptera Saltatoria, Locustidae vel Acridiidae)*. 3(2): 93.

Material examined: INDIA, Rajasthan, Rajasmand, 1 nymph, 07-X-2009, on grasses; Dungarpur, 1♀, 09-X-2009, on grasses; Pali, 1♂, 2 nymph, 04-III-2011, on grasses; Hanumangarh, 2 nymph, 06-III-2011, on grasses; Ajmer, 2♂♂, 2♀♀, 2 nymph, 08-III-2011, on grasses; Bharatpur, 2♂♂, 5♀♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 30.39; Pronotum: 4.98; Antenna: 9.72; Tegmina: 25.39; Hind Femur: 17.80.

Female: Body: 46.54; Pronotum: 7.25; Antenna: 11.52; Tegmina: 36.37; Hind Femur: 25.27.

Distribution: Himachal Pradesh, Jammu & Kashmir, Punjab, Haryana, Rajasthan, Madhya Pradesh, Tamil Nadu and Uttarakhand.

Genus *Phlaeoba* Stal, 1861

Gomphocerus (Phlaeoba) Stal, 1861. *Kongliga Svenska fregatten Eugenies Resa omkring jorden under befal af C.A. Virgin aren 1851-1853 (Zoologi)*. 2(1): 340.

Type species: *Gomphocerus rusticus* Stal, 1861 (= *Phlaeoba fumosa*). *Kongliga Svenska fregatten Eugenies Resa omkring jorden under befal af C.A. Virgin aren 1851-1853 (Zoologi)*. 2(1): 340.

Diagnosis: Body small to medium size. Antennae ensiform. Head conical. Fastigium of vertex angular. Frontal ridge deeply sulcate. Dorsum of pronotum crossed by posterior transverse sulcus only; median and lateral carina well developed; metazona slightly shorter than prozona; posterior margin of pronotum broadly truncate. Mesosternal interspace open. Tegmina and wings fully developed. Hind femur short and thick; inner side without stridulatory file. Arolium of median size.

The genus is represented by three species from this region. A key for their separation is given below:

Key to species of *Phlaeoba* Stal, 1860

1. Lateral carina of pronotum distinct; apical valve of Aedeagus with pointed apex.....**2**
- Lateral carina of pronotum indistinct or coarsely indicated or absent; apical valve of Aedeagus with obtuse apex.....*P. tenebrosa* (Walker, 1871)
2. Tegmina broad, the costa not expanded near the base.....*P. infumata* Brunner, 1893
- Tegmina narrow, the costa slightly expanded near the base, especially in the Female.....*P. antennata antennata* Brunner, 1893

***Phlaeoba tenebrosa* (Walker, 1871)**

Opomala tenebrosa Walker, 1871. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the*

British Museum Supplement. 53.

Phlaeoba tenebrosa (Walker); Kirby, 1910. *A Synonymic Catalogue of Orthoptera (Orthoptera Saltatoria, Locustidae vel Acridiidae)*. 3(2): 138.

Material examined: INDIA, Rajasthan, Bharatpur, 1♂, 1♀, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 22.19; Pronotum: 4.28; Antenna: 9.15; Tegmina: 20.89; Hind Femur: 14.13.

Female: Body: 30.33; Pronotum: 5.74; Antenna: 9.41; Tegmina: 26.73; Hind Femur: 18.54.

Distribution: Jammu & Kashmir, Himachal Pradesh and Rajasthan.

***Phlaeoba infumata* Brunner, 1893**

Phlaeoba infumata Brunner, 1893. *Ann. Mus. Civ. Stor. Nat. Genova*. 2-13(33): 124.

Material examined: INDIA, Rajasthan, Dungarpur, 4♂♂, 09-X-2009, on grasses.

Measurements (length in mm):

Male: Body: 22.08; Pronotum: 4.32; Antenna: 8.37; Tegmina: 19.98; Hind Femur: 14.29.

Female: Body: 31.92; Pronotum: 6.58; Antenna: 9.06; Tegmina: 27.55; Hind Femur: 19.06.

Distribution: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Goa, Haryana, Himachal Pradesh, Manipur, Tamil Nadu, Uttar Pradesh, Madhya Pradesh and West Bengal.

***Phlaeoba antennata antennata* Brunner, 1893**

Phlaeoba antennata Brunner, 1893. *Ann. Mus. Civ. Stor. Nat. Genova*. 2-13(33): 125.

Material examined: INDIA, Rajasthan, Bharatpur, 2♂♂, 1♀, 5 nymphs, 10-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 20.33; Pronotum: 4.02; Antenna: 7.04; Tegmina: 18.82; Hind Femur: 12.52.

Female: Body: 36.02; Pronotum: 5.85; Antenna: 7.97; Tegmina: 28.36; Hind Femur: 18.80.

Distribution: Arunachal Pradesh, Assam, Himachal Pradesh, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and West Bengal.

Subfamily Gomphocerinae Fieber, 1853

The subfamily Gomphocerinae is represented by three genera from this region. A key for their separation is given below:

Keys to genera of Gomphocerinae Fieber, 1853

1. Antennae filiform; prosternal process

- absent.....2
- Antennae ensiform or narrow ensiform; prosternal process present.....***Ochrlidia*** Stal, 1873
- 2. Fastigial foveolae not visible from above; fastigium of vertex without median carinula.....***Stenohippus*** Uvarov, 1926
- Fastigial foveolae visible from above; fastigium of vertex with median carinula.....***Aulacobothrus*** Bolivar, 1902

Genus *Ochrlidia* Stal, 1873

Ochrlidia Stal, 1873. *Recencio Orthopterorum. Revue critique des Orthopteres decrits par Linne, De Geer et Thunberg*. 1: 92, 104.

Type species: *Platypterna tibialis* Fieber, 1853. *Lotos*. 3: 98.

Diagnosis: Body of medium size. Antennae ensiform. Fastigium of vertex with median and lateral carinulae. Fastigial foveolae elongate. Frontal ridge narrow and sulcate. Dorsum of pronotum crossed by posterior transverse sulcus; median and lateral carinae present; metazona shorter than prozona; posterior margin of pronotum obtuse-angular. Prosternal process conical. Mesosternal interspace longer than wide. Tegmina and wings fully developed. Hind tibiae with inner pair of spurs subequal and slightly longer than external one. Arolium of medium size.

The genus is represented by single species from this region.

***Ochrlidia gracilis gracilis* (Krauss, 1902)**

Platypterna gracilis Krauss, 1902. *Verh. der Zoologisch-Botanischen Gesellsch. Wien*. 52: 231, 236.

Ochrlidia gracilis gracilis (Krauss); Massa, 2009. *Jour. Orth. Res.* 18(1): 86.

Material examined: INDIA, Rajasthan, Nagaur, 4♂♂, 03-X-2009, on Bajra; Bikaner, 1♂, 05-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 20.46; Pronotum: 3.92; Antenna: 7.09; Tegmina: 19.60; Hind Femur: 10.01.

Female: Body: 30.71; Pronotum: 5.01; Antenna: 9.26; Tegmina: 25.62; Hind Femur: 14.36.

Distribution: Jammu and Kashmir, Himachal Pradesh, Rajasthan, Haryana and Punjab.

Genus *Stenohippus* Uvarov, 1926

Stenohippus Uvarov, 1926. *Trans. Entomol. Soc. London*. 423.

Type species: *Chorthippus xanthus* Karny, 1907. *S.B. Akad. Wiss. Wien, Math.-Nat. Kl. (Abt. 1)*. 116: 363, 364.

Diagnosis: Body of small size. Antennae filiform. Fastigium of vertex with lateral carinulae; median carinula absent. Fastigial foveolae not visible from above. Frontal ridge flat. Dorsum of pronotum crossed by posterior transverse sulcus only; median and lateral carinae well

developed; metazona about as long as prozona; posterior margin of pronotum obtuse-angular. Prosternal process absent. Mesosternal interspace wider than long. Tegmina and wings fully developed. Hind tibiae with inner pair of spurs unequal and much longer than external one. Arolium small.

The genus is represented by single species from this region.

***Stenohippus mundus* (Walker, 1871)**

Stenobothrus mundus Walker, 1871. *Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum Supplement*. 81.

Material examined: INDIA, Rajasthan, Nagaur, 1♂, 03-X-2009, on jowar; 5♂♂, 2♀♀, 03-X-2009, on Bajra; Rajasmand, 1♀, 07-X-2009, on grasses; 1♀, 07-X-2009, on jowar; Jaisalmer, 4♂♂, 6♀♀, 28-II-2011, on grasses; Jalor, 25♂♂, 25♀♀, 03-III-2011, on grasses; Pali, 12♂♂, 11♀, 04-III-2011, on grasses; Bikaner, 5♂♂, 8♀♀, 05-III-2011, on grasses; Hanumangarh, 10♂♂, 4♀♀, 06-III-2011, on grasses; Sikar, 7♂♂, 3♀♀, 07-III-2011, on grasses; Ajmer, 11♂, 22♀♀, 08-III-2011, on grasses.

Measurements (length in mm):

Male: Body: 14.37; Pronotum: 2.41; Antenna: 5.10; Tegmina: 13.65; Hind Femur: 8.72.

Female: Body: 19.68; Pronotum: 3.10; Antenna: 5.94; Tegmina: 18.24; Hind Femur: 11.73.

Distribution: Maharashtra, Jammu & Kashmir, Haryana and Rajasthan.

Genus *Aulacobothrus* Bolivar, 1902

Aulacobothrus Bolivar, 1902. *Ann. Soc. ent. Fr.* 70: 597.

Type species: *Aulacobothrus strictus* Bolivar, 1902. *Ann. Soc. ent. Fr.* 70: 598.

Diagnosis: Body of small size. Antennae filiform. Fastigium of vertex with lateral carinulae; median carinula up to the middle. Fastigial foveolae of variable shape; visible from above. Frontal ridge flat. Dorsum of pronotum crossed by posterior transverse sulcus; median and lateral carinae well developed; metazona as long as or shorter than prozona; posterior margin of pronotum angular. Prosternal process absent. Mesosternal interspace wider than long. Tegmina and wings fully developed. Hind tibiae with inner pair of spurs subequal or unequal and variably longer than external one. Arolium of small size.

The genus is represented by single species from this region.

***Aulacobothrus taeniatus* Bolivar, 1902**

Aulacobothrus taeniatus Bolivar, 1902. *Ann. Soc. Ent. Fr.*, Paris. 70: 600.

Material examined: INDIA, Rajasthan, Udaipur, 1♀, 06-X-2009, on bajra.

Measurements (length in mm):

Male: Body: 16.48; Pronotum: 2.97; Antenna: 8.94; Tegmina: 12.78; Hind Femur: 10.84.

Female: Body: 23.03; Pronotum: 4.66; Antenna: 7.91; Tegmina: 18.54; Hind Femur: 13.37.

Distribution: Tamil Nadu and West Bengal.

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5. References

1. Ahluwalia PJS, Sikka HL, Venkatesh MV. Behaviour of swarms of *Oedaleus senegalensis* Krauss (Orthoptera: Acrididae - subfamily - Oedipodinae). *Indian Journal of Entomology* 1977; 38(2):114-117.
2. Bolivar I. Les Orthopteres de St Joseph's College a Trichinopoly (Sud de l' Inde). 3me partie. *Ann Soc Ent Fr* 1902; 70:580-635.
3. Bolivar I. Observaciones sobre los Truxalinos. *Bol Soc Esp Hist nat* 1909; 9:285-296.
4. Bolivar I. Estudios Entomologicos. *Trab. Mus. Cienc. Nat Madr Zool Ser* 1912; 4:62.
5. Bolivar I. Estudios entomologicos Segunda parte. *Trab. Mus. Cienc. Nat zool Madrid (Ser. Zool.)* 1914; 20:1-110.
6. Bolivar I. Contribution alla concocimento de la fauna India. *Rev Acad Ciene Madr* 1917; 16:278-412.
7. Bolivar I. Contribution al concocimento de la fauna Indica. *Orthoptera (Locustidae vel Acrididae)*. *Revista R. Acad Cient Exact* 1918a; 16:278-412.
8. Bolivar I. Estudios entomologicos. Tercera parte. Seccion Oxyae (Orth. Acrididae o Locustidae). *Trab. Mus. Cienc. Nat Madr Zool Ser* 1918b; 34:1-43.
9. Chandra S. Some field observations on a small concentration of *Oedaleus senegalensis* Krauss (Orthoptera: Acrididae) in the Indian desert. *Plant Protection Bulletin, India* 1983; 35(1-2):9-13.
10. Dhakad D, Nagar R, Mal J, Rathore PS, Swaminathan R. Diversity of Orthopteran fauna in sugarcane at Udaipur. *The Bioscan* 2014; 9(1):207-210.
11. Kirby WF. A Synonymic Catalogue of Orthoptera. Vol. 3. *Orthoptera Saltatoria*. Part II. *Locustidae vel Acrididae*, London, 1910, ix + 674.
12. Kirby WF. The Fauna of British India, including Ceylon and Burma. *Orthoptera (Acrididae)*. London, 1914, Ix + 276.
13. Kumar H, Usmani MK. A Checklist of Acridoidea (Orthoptera) of Punjab, India. *J ent Res* 2012a; 36(2):173-175.
14. Kumar H, Usmani MK. A Checklist of Acrididae (Orthoptera: Acridoidea) of Himachal Pradesh. *Advances in Life Sciences* 2012b; 1(2):162-163.
15. Saussure HDE. *Prodromus Oedipodiorum*,

- insectorum ex ordine Orthopterorum. Mem Soc Phys Geneve 1884; 28:1-256.
16. Saussure HDE. Additamenta ad Prodromum Oedipodiorum. Mem. Soc. Phys. Geneve 1888; 30:1-182.
 17. Shishodia MS. Insecta: Orthoptera. Fauna of Pichhola Lake, Wetland Ecosystem Series 2007; 8:85-92.
 18. Stal C. Orthoptera species novas descripsit. Kongliga Svenska fregatten Eugenie Resa omkring Jorden 1860; 2(1):299-350.
 19. Stal C. Orthoptera nova descripsit. Kongliga Vetenskaps - akademiens Forhandlingar, Stockholm 1873a; 30(4):39-53.
 20. Stal C. Recensio orthopterorum. Revue critique des Orthopteres decrits par Linne, De Geer et Thunberg. Norstedt & Soner, Stockolm, part 1, 1873b; 154.
 21. Tandon SK, Hazra AK. Faunal diversity in India Orthoptera: ENVIS Center, Zool Surv India Kolkata 1998; 183-188.
 22. Tandon SK, Shishodia MS. On a collection of Acridoidea (Orthoptera) from Rajasthan, India. Newsletter Zoological Survey of India 1976; 2(1):7-11.
 23. Usmani MK, Khan MI, Kumar H. Studies on Acridoidea (Orthoptera) of Western Uttar Pradesh. Biosystematica 2010; 4(1):39-58.
 24. Usmani MK, Kumar H, Naiku SM. Taxonomic Significance of Phallic Complex in some Indian species of Acridoidea (Orthoptera). Biosystematica 2011; 5(1):55-63.
 25. Uvarov BP. Three New Alpine Orthoptera From Central Asia, J Bombay Nat Hist Soc 1921a; 28:71-75.
 26. Uvarov BP. Notes on Orthoptera in the British Museum. I. The group Euprepocnemini. Trans Ent Soc Lond 1921b; 106-144.
 27. Uvarov BP. A revision of the old world Cyrtacanthacrini. Ann Mag Nat Hist 1924; 13(9):1-19.
 28. Uvarov BP. Distributional records of Indian Acrididae. Rec. Indian Mus 1927; 29:233-239.
 29. Uvarov BP. Differentiating characters of Oedipodinae and Acridinae. Trans Am Ent Soc 1942; 67:303-361.
 30. Walker F. Catalogue of the Specimens of Dermaptera Saltatoria in the Collection of the British Museum, 1870, Part I. Locustidae (concluded) and Acrididae (part) pp. 1-117; Part II. Pp. 154-224; Part III, 425-604; Part IV. Acrididae (concluded) 605-801.
 31. Walker F. Catalogue of the specimens of Dermaptera Saltatoria in the Collection of the British Museum, Supplement, 1871, Part V, 49-89.